Sakharnov, V. A.

25(1,5) 28(1) SOV/135-59-7-3/15

AUTHOR: Paton, B.Ye., Academician of the AS, UkrSSR,
Lebedev, V.K., Candidate of Technical Sciences

TITLE: Works of the Institute of Electrical Welding imeni Ye.O.Paton of the AS, UkrSSR in the Field of Resistance Welding

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 7, pp 7-12(USSR)

ABSTRACT: The author describes briefly the research performed by the Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electrical Welding imeni Ye.O. Paton, AS UkrSSR) in the field of resistance welding. For butt welding of rails, engineers S.I. Kuchuk-Yatsenko and V.S. Sakharnov developed a new welding technology, based on the application of continuous fusion. The institute developed rail welding machines K-135 and K- 134. Engineer N.V. Podola worked on the application of low-frequency current for butt welding reducing the operating frequency of the UMAR-25 welding machine from 50 to 10 cycles. Candidate of Tech-

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Works of the Institute of Electrical Welding imeni Ye.O. Paton of the AS, UkrSSR in the Field of Resistance Welding

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nical Sciences, R.I. Lashkevich and engineer S.I.
Kuchuk-Yatsenko worked on fusion welding of longitu-
dinal pipe seams. Engineers Yu.D. Yavorskiy, Y.D.
Litvinchuk, and P.M. Prikhod'ko worked on an automa-
tic welding machine producing valve blanks for inter-
nal combustion engines in cooperation with the Yaro-
slavskiy motornyy zavod (Yaroslavl' Engine Plant).
Candidate of Technical Sciences Yu. A. Tachentsev,
engineers V.A. Sakharnov and Yu.N. Lankin worked on
suspended spot welding machines with built-in trans-
formers. Engineers P.M. Prikhod'ko and V.A. Sakharnov
worked on spot welding of T-joints. Candidate of Tech-
nical Sciences I.V. Kirdo and engineer I.K. Oleynik
worked on welding longitudinal seams of pipes with
high frequency current. Engineers V.A. Zayadskiy, O.V.
Popovskiy and Yu.S. Grodetskiy worked on automatic
controls of welding operations. Candidate of Technical
Sciences G.P. Sakhatskiy and engineer R.M. Shirokovskiy

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SOV/135-59-7-3/15

Works of the Institute of Electrical Welding imeni Ye.O.Paton of the AS UkrSSR in the Field of Resistance Welding

worked on a device for automatic thermal treatment of welded cable butts. There are 5 photographs, 4 graphs, 2 diagrams, 1 table and 11 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O.Patona AN USSR (Institute of Electrical Welding imeni Ye.O. Paton, AS UkrSSR)

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L 24811-66 EWT(d)/EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(l) JD/HM/DJ

ACC NR: AP6007666 (N) SOURCE CODE: UR/0413/66/000/003/0039/0039 41

AUTHORS: Galyan, B. A.; Sakharnov, V. A.; Kuchuk-Yatsenko, S. I.; Moiseyenko, 2 Ye. G.; Tishura, V. I.

ORG: none

18 18

TITLE: Machine for pressure butt welding of pipes and shafts. Class 21, No. 178425 [announced by Electric Welding Institute im. Ye. O. Paton of the AN UkrSSR 18 (Institut elektrosvarki AN UkrSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1966, 39

TOPIC TAGS: butt welder, butt welding, pipe

ABSTRACT: This Author Certificate presents a machine for pressure butt welding of pipes and shafts, containing centering and clamping mechanisms. These mechanisms consist of two clamping rings, one of which is connected to hydraulic cylinder push rods, while the other is connected to the cylinder bodies which press the pipes together with the help of clamping shoes during the welding process. To allow welding of parts of different diameter with intermittent heating, the clamping rings are equipped with auxiliary hydraulic cylinders, 11 pushing 14 2

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ACC NR: AP6007666

axially on each clamping ring. The cylinders displace the clamping shoes toward the center of the machine (see Fig. 1).

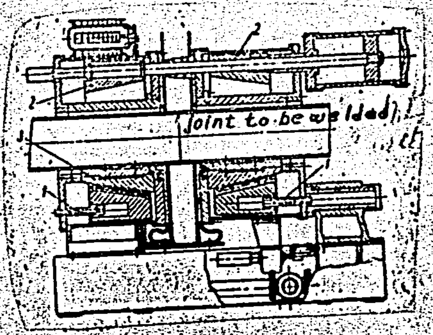

Fig. 1. 1 - auxiliary cylinders;
2 - clamping rings;
3 - clamping shoes.

Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 14Jan65

Card 2/2

SAKHARNYY, N.F.

Saharnyi, N. F. **Flow without separation past a system of two airfoils of given shape.** Akad. Nauk SSSR. Prikl. Mat. Meh. 13, 445–448 (1949). (Russian)

The author considers a two-dimensional irrotational and steady flow of an incompressible fluid around two thin airfoils with parallel chords and of given shape. The method is based on the replacement of each airfoil by a substitution vortex sheet over which the vorticity varies continuously. Analytically the problem is reduced to a system of two integral equations, which is solved by an approximation method. The results are illustrated by the flow past two equal and parallel flat plates. In this case a good agreement is found with known results. *E. Leimanis.*

Source: Mathematical Reviews, 1950 Vol 11 No. 6

SAKHARNYY, Nikolay Fedoseyevich; TURILOV, G.I., nauchn. red.; VLASOV, A.I., red.

[Course in theoretical mechanics] Kurs teoreticheskoi mekhaniki. IAroslavl', Vysshaia shkola, 1964. 844 p. (MIRA 17:7)

BELYAVSKIY, Samuil Moiseyevich; SAKHARNYY, N.F., red.

[Theoretical mechanics] Teoreticheskaia mekhanika. Izd.2., perer. Moskva, Vysshaia shkola, 1965. 319 p.
(MIRA 18:7)

SAKHAROV, A.

He never had the time... Voen. znan. 41 no.10:11 O '65. (MIRA 18:10)

SAKHAROV, A.

Everday work of an astronaut. Starsh.-serzh. no.9:8 S '61. (MIRA 15:2)

(Titov, German Stepanovich, 1935-)

SAKHAROV, A., arkhitektor

Construction of large-panel apartment houses in Bucharest. Zhil. stroi. no.1:21-23 '63. (MIRA 16:2)

(Bucharest—Apartment houses)
(Bucharest—Precast concrete construction)

SAKHAROV, A.A., dotsent

Present-day problems of the pathogenesis, the prevention and treatment of logoneurosis. Zhur. ush., nos. i gorl. bol. 23 no.5:57-64 S-O'63 (MIRA 17:3)

1. Iz otorinolaringologicheskoy kafedry (zav. - chlen-korrespondent AMN SSSR, prof. V.F. Undrits [deceased]) 1-go Leningradskogo meditsinskogo instituta imeni akademika Pavlova.

SAKHAROV, A. A.

"Pseudocapsule of the Palatal Tonsils and Its Significance in Inflammatory Processes." Cand Med Sci, First Leningrad Medical Inst, Leningrad, 1953. (RZhBiol, No 8, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

SAKHAROV, A.A., dots.

The problem of medical and pedagogic aid in disorders of hearing, voice, and speech. Vest.otorin. 20 no.2:3-9 Mr-Ap '58.
(MIRA 12:11)

1. Iz kafedry bolezney ukha, gorla i nosa (zav. - chlen-korrespondent AMN SSSR prof.V.F.Undrin) I Leningradskogo meditsinskogo instituta.

(HEARING DISORDERS, ther.
combined med.-training program (Rus))
(SPEECH DISORDERS, ther.
same)

SAKHAROV, A.A.

Determination of microconcentrations of selenium in ores and rocks.
Zhur. anal. khim. 15 no.5:614-617 S-O '60. (MIRA 13:10)

1. All-Union Scientific Research Institute of Prospecting Methods and Technique, Leningrad.
(Selenium--Analysis)

SAKHAROV, A. A.

"High-Frequency Photography," GOSKINOIZDAT, Moscow, 1950.

State Cinematographic Inst., Moscow

SAKHAROV, A.A. [translator]; TAGER, P.G., red.; MAYKOVA, Ye.I., red.;
GERASIMOVA, Ye.S., tekhn.red.

[High-speed cinematography in science and technology; collection of articles; translated from the English and French] Vysokoskorstnaia kinofotos"emka v nauke i tekhnike; sbornik statei. Moskva, Izd-vo inostr. lit-ry, 1955. 494 p. (MIRA 11:6)
(Cinematography)

SAKHAROV, A.A.

USSR/Chemical Technology - Chemical Products and Their Application. Photographich Materials. I-6

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2414

Author : Sakharov, A.A.
Inst : -
Title : Third International Congress on High-Speed Photography and Cinematography.

Orig Pub : Zh. nauchn. i prikl. fotogr. i kinematogr., 1957, 2, No 3, 238-239

Abstract : A brief account of the paters presented (London, September 1956).

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SAKHAROV, A. A.
All-Union Scientific Research Institute of Cinematography.

"The High-Speed Recording Method."

papers presented at Fourth International Congress of High-Speed Photography, 22-27 Sep 1958, in Cologne.

SAKHAROV, A.A.

Terminology of high-speed shotography and cinematography. Usp. nauch.fot. 6:218-220 '59. (MIRA 13:6)

(Photography, High speed--Terminology)

SOV/77-4-4-14/19

23(3,5)

AUTHOR: Sakharov, A.A.

TITLE: Classification of Methods for High-Speed Photography

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1959, Vol 4, Nr 4, pp 304-311 (USSR)

ABSTRACT: The article gives a summary of a lecture which was performed at the Fourth International Congress on High-Speed Photography. The author presents a detailed compilation of different methods for high-speed photography in form of schedules. There are 4 tables and 73 references, 17 of which are Soviet, 40 English, 10 French and 6 German.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI) (All-Union Scientific Research Institute for Motion Picture and Photography)

SUBMITTED: September 18, 1958

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SAKHAROV, A.

Page of the amateur motion-picture photographer; what will the new motion-picture cameras be like? Sov. foto 19 no.12:42-43 D '59. (MIRA 13:3)

(Motion-picture cameras)

SAKHAROV, Aleksandr Aleksandrovich; GOLDOVSKIY, Ye.M., prof., red.;
MOSHENTSEVA, I.I., red.; MURASHOVA, N.Ya., tekhn.red.

[Anglo-Russian dictionary of photography and cinematography]
Anglo-russkii slovar' po fotografii i kinematografii. Pod red.
E.M.Goldovskogo. Moskva, Glav.red.inostr.nauchno-tekhn.slovarei Fizmatgiza, 1960. 395 p. (MIRA 13:6)
(Photography--Dictionaries)
(Motion-picture photography--Dictionaries)
(English language--Dictionaries--Russian)

SAKHAROV, A.

Second Conference on High-Speed Still and Motion-picture Photography. Tekh.kino i telev. 4 no.8:95-96 Ag '60. (MIRA 13:8)

(Photography, High-speed)
(Motion-picture photography)

SAKHAROV, A.A.

International congresses on high speed photography and cinematography. Zhur.nauch.i prikl. fot.i kin. 6 no.6:457-462 N-D '61. (MIRA 15:1)

(Photography, High speed--Congresses)

S/187/61/000/012/004/004
D053/D112

AUTHOR: Sakharov, A.A.

TITLE: Application of high-speed photography in scientific research

PERIODICAL: Tekhnika kino i televideniya, no. 12, 1961, 39-50

TEXT: The author briefly surveys high-speed photographic equipment and its use for research on industrial technology, machine performance, hydrodynamics, aerodynamics, gas dynamics, solid state physics, and electrical phenomena and processes. Photographing at up to 250 frames per second is carried out by intermittent-film-transport cameras, such as the Soviet ПСК-24М (PSK-24M) and СКС-3 (SKS-3) cameras, and in the middle frame frequency range up to 20,000 frames/sec, by the Soviet СКС-1 (SKS-1) camera and the German "Zeitlupe" of the Zeiss Ikon Plant and "Pentazet" of the Dresden Motion-Picture Equipment Plant. Photographing at frame frequencies from 25,000 to 100,000 frames/sec is carried out by the ФП-22 (FP-22) camera, and at frequencies of 25,000 to 2.5 million frames/sec by an СФР-Л (SFR-L) camera. This camera was devised by the Institut khimicheskoy fiziki Akademii nauk

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Application of high-speed ...

SSSR (Institute of Chemical Physics of the Academy of Sciences USSR). Photographing at 400,000 up to 5 - 10 million frames/sec is carried out with the ФП-38 (FP-38) camera devised by the Gosudarstvennyy opticheskiy institut im. S.I. Vavilova (State Optical Institute im. S.I. Vavilov), while for extremely high-speed photography at 2 to 33 million frames/sec the ЛВ-1 (LV-1) camera, designed by the above-mentioned Institute of Chemical Physics, is used. For photographing at frame frequencies of 1 million to 100 million frames per second, high-speed raster cameras and cameras with Kerr cells and image translators were used. The following institutions played an important role in the development of high-speed photography for research purposes in the USSR: The laboratoriya nauchno-prikladnoy fotografii i kinematografii Akademii nauk SSSR (Laboratory of Scientific and Applied Photography and Cinematography of the Academy of Sciences USSR); The Tsentral'naya kinolaboratoriya Ministerstva vysshego i srednego spetsial'nogo obrazovaniya SSSR (Central Motion-Picture Laboratory of the Ministry of Higher and Secondary Specialized Education USSR); The kinolaboratoriya Kafedry nauchnoy fotografii i kinematografii Moskovskogo Gosudarstvennogo universiteta im. M.V. Lomonosova (Motion-Picture Laboratory at the Department of Scientific

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Application of high-speed ...

Photography and Cinematography of the Moscow State University im. M.V. Lomonosov); and the kinolaboratoriya Leningradskogo politekhnicheskogo instituta im. M.I. Kalinina (Motion-Picture Laboratory of the Leningrad Polytechnic Institute im. M.I. Kalinin). The following institutions have carried out research on industrial technology using high-speed photography: (1) The Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy) conducted research work on the process of hot-rolling of metal. (2) The Leningrad Polytechnic Institute im. M.I. Kalinin conducted research on the rolling of hollow bodies with the use of a Zeiss Ikon ZL-16 camera, and on the machine grinding process with the use of an SKS-1 camera. (3) The Moskovskiy stankoinstrumental'nyy institut (Moscow Institute of Machine Tools and Instruments) conducted research work on the influence of plastic deformation on the surface layer of a workpiece. (4) The Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Building) conducted research on the plastic deformation in the metal-cutting zone with the use of a "Zeitlupe" ZL-1 camera of the Zeiss Ikon Plant, and an FP-22 camera. (5) The laboratoriya rezaniya nauchno-

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issledovatel'skogo instituta chasovoy promyshlennosti (Metal-Cutting Laboratory of the Scientific Research Institute of the Watchmaking Industry) investigated the process of high-speed machining of watch parts. (6) The Institut mashinovedeniya Akademii nauk SSSR (Institute of the Science of Machines of the Academy of Sciences USSR) investigated the machining of hard materials by means of ultrasound, by using microphotographs taken with the СКС-1М (SKS-1M) camera at a frequency of 8,000 frames/sec. (7) The Institut metallurgii im. A.A. Baykova (Institute of Metallurgy im. A.A. Baykov) and the Moscow State University im. M.V. Lomonosov conducted joint research on the process of formation of metallized coatings by molten metal spraying with the aid of an FP-22 camera. (8) The Institut Teploproyekt (Teploproyekt Institute) investigated the fiber-forming process in the production of mineral wool with the aid of the "Grande Vitesse" camera of the A. Debris (A. Debri) Plant, and the "Zeitlupe" and SKS-1 cameras. Research on machine and mechanism performance was carried out using cameras analogous to the model Z camera of the Askania Plant, and the "Grande Vitesse" and SKS-1 cameras. The following institutes were among those using high-speed photography in this field: (1) The Moskovskiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (Moscow Institute of Rural Mechanization and Electrification); (2) The Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti (Kiyev Technological Institute of the Food Industry); (3) The Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko (Kiyev State University im. T.G. Shevchenko); (4) The Leningrad Polytechnic Institute; (5) The Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut dobychi uglya gidravlicheskim sposobom (All-Union Scientific Research, Design and Planning Institute of Coal Production Using Hydraulic Methods), located in Stalinsk, Kemerovskaya Oblast. Research on hydrodynamics and hydrokinetics using high-speed photography has been conducted by the following institutions: (1) The Institut energetiki i gidravliki Akademii nauk Armyanskoy SSR (Institute of Power Engineering and Hydraulics of the Academy of Sciences Armyanskaya SSR); (2) The Leningrad Polytechnic Institute im M.I. Kalinin; (3) The Laboratoriya gidrodinamiki mekhaniko-matematicheskogo fakul'teta MGU im. M.V. Lomonosova (Laboratory of Hydrodynamics of the Department of Mechanics and Mathematics of the MGU im. M.V. Lomonosov); (4) The Leningradskiy gornyy institut (Leningrad Mining Institute); (5) The Institut energetiki Kazakhskoy Akademii nauk (Power Engineering Institute of the Kazakh Academy of Sciences); (6) The Vsesoyuznyy teplotekhnicheskiy institut im. F.E. Dzerzhinskogo (All-

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Union Institute of Heat Engineering im. F.E. Dzerzhinskiy). In the latter institute, research on the surface boiling of water has been conducted for several years with the use of the "Zeitdehner" camera of the AEG firm. High-speed photography has also been widely used in aerodynamics and gas dynamics. The following institutions are among those who have conducted such research: (1) The Energeticheskiy institut im G.M. Krzhizhanovskogo Akademii nauk SSSR (Power Engineering Institute im. G.M. Krzhizhanovskiy of the Academy of Sciences USSR) has conducted research on the reflection and refraction of detonation waves in gaseous mixtures. The equipment used was an СФР-2 (SFR-2) camera and an ИАБ-451 (IAB-451) shadow unit. (2) The Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov (All-Union Scientific Research Institute of New Building Materials). (3) The Laboratoriya dvigateley Akademii nauk SSSR (Engine Laboratory of the Academy of Sciences USSR) conducted research on combustion processes using a "Zeitdehner" camera. (4) The Power Engineering Institute of the Kazakh Academy of Sciences investigated combustion processes using high-speed photography to determine the burning time of coal-dust particles. (5) At the Tsentral'-

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nyy institut aviatsionnogo motorostroyeniya im. P.I. Baranova (Central Institute for Aviation Engine-Building im. P.I. Baranov), stereoscopic photography was used to record the spatial flight of solid particles in the combustion process. The photography was carried out at a frequency of 4,000 frames/sec using a 16-mm SKS-1 camera with a special mirror stereo-adapter designed by the NIKFI. In the field of solid state physics, the Moskovskiy inzhenerno-stroitel'nyy institut im. V.V. Kuybysheva (Moscow Construction Engineering Institute im. V.V. Kuybyshev) and the MGU jointly investigated the distribution of stresses in structures and various media under dynamic loads, using SKS-1, "Zeitlupe", FP-22 and SFR-L cameras at frequencies from 2.5 thousand to 2.5 million frames/sec. The Tsentral'nyy nauchno-issledovatel'skiy institut im. A.I. Krylova (Central Scientific Research Institute im A.I. Krylov) has studied the propagation of stress waves in solid bodies, using an SFR-L camera (frequency up to 2.5 million frames/sec) and the ИФК -20000 (IFK-20000) gas-discharge lamp. The propagation of stress waves in solid bodies was also investigated by the Department of Mechanics and Mathematics of the MGU, using an FP-22 camera and СВДШ-250-3 (SVDSh-250-3) and СВДШ-500-3 (SVDSh-500-3) mercury lamps. The following institutions also used high-

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speed photography to study different phenomena in solid state physics: (1) The Fiziko-technicheskiy institut Akademii nauk SSSR (Physical-Technical Institute of the Academy of Sciences USSR); (2) The Vsesoyuznyy nauchno-issledovatel'skiy institut burovoy tekhniki (All-Union Scientific Research Institute of Drilling Techniques); (3) The Moscow State University im. M.V. Lomonosov; (4) The Leningrad Mining Institute; (5) The Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining Institute). Electrical phenomena and processes were investigated by means of different high-speed photographic equipment with a frequency range from a few thousand to 100 million frames/sec. The following institutions have conducted such research: (1) The Leningradskiy institut kinoinzhenerov (Leningrad Institute of Motion-Picture Engineers) conducted research on the electrical erosion of metal electrodes, using an SKS-1 camera. (2) The Tsentral'naya nauchno-issledovatel'skaya laboratoriya elektricheskoy obrabotki materialov (Central Scientific Research Laboratory for the Electrical Processing of Materials) has also investigated the electric erosion process using SKS-1 and СФР-2М (SFR-2M) cameras. (3) The Institut atomnoy energii Akademii nauk SSSR (Atomic Energy Institute of the Academy of Sciences USSR) investigated electric discharges in gases,

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at currents of up to 2 · 10^6 a, by photographing them at a frequency of 10 million frames/sec. The camera was fitted with a Kerr cell as a high-speed shutter. (4) The Moskovskiy elektrolampovyy zavod (Moscow Electric Lamp Plant) investigated jointly with the Leningrad Institute of Motion-Picture Engineers the performance of a flash bulb and the discharge forming in a pulse discharge tube. Special high-speed РКС-1 (RKS-1) cameras, devised by the Leningrad Institute of Motion-Picture Engineers with a frame frequency of up to 100 million frames/sec, were used. In recent years, high-speed photography has also been used in studying high-temperature plasma, for example, by the Atomic Energy Institute of the Academy of Sciences USSR. The results of research carried out using high-speed photography will be presented at the Third All-Union Conference on High-Speed Photography and Cinematography in May 1962. The conference is being organized by the Komissiya po nauchnoy fotografii i kinematografii OKhN Akademii nauk SSSR (Commission for Scientific Photography and Cinematography of the OKhN of the Academy of Sciences USSR). There are 9 figures, 1 table, and 11 Soviet-bloc references.

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S/0077/64/009/006/0472/0473

ACCESSION NR: AP5004557

AUTHOR: Sakharov, A. A. 20

TITLE: Conference on the application of stereo motion-picture and still photography in scientific research B

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 9, no. 6, 1964, 472-473

TOPIC TAGS: scientific conference, stereoscopic photography, motion picture photography

ABSTRACT: A conference on the application of stereo photography in scientific research was held in Moscow, on 19 and 20 May 1964. The conference was organized by the Scientific-Motion-Picture and Science and Technology Sections, Organizational Committee of the Trade Union of Motion-Picture Workers SSSR, in cooperation with the Motion-Picture Section of the House of Scientists, Academy of Sciences SSSR. About 250 delegates from 90 institutions and industries participated. The opening address was delivered by Ye. M. Goldovskiy, Doctor of Technical Sciences. Following is a partial list of participants in the conference, together with the subjects

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of their papers. N. A. Ovsyannikova (Scientific Research Institute of Motion Picture Photography [NIKFI]). Goals and problems in the use of stereoscopy in scientific research. A. N. Shatskaya (NIKFI). Selection of optimal parameters for stereo motion pictures. N. I. Gol'tsman (NIKFI). Quantitative characteristics of the perception of the stereo effect. A. G. Nikolayenko and Yu. P. Staseyeva (Local Branch of the Central Scientific Research Institute of Aerohydrodynamics im. Prof. N. Ye. Zhukovskiy). Making measurement motion pictures. S. P. Ivanov and L. V. Akimakina (NIKFI). Application of the Raster method of stereo filming in scientific investigations. M. S. Ivanov and M. B. Mayerzon (NIKFI). Multipair stereo filming and projection. Yu. M. Butov (Institute of Experimental and Clinical Oncology, Academy of Medical Sciences SSSR). Applications of stereo photography in medicine and biology. Ye. G. Shayer (Ukrainian Experimental Scientific Research Institute of Eye Diseases and Tissue Therapy im. Academician Filatov). Applications of stereo photography in ophthalmology. L. S. Urmakher (Institute of Eye Diseases im. Gel'mgol'ts). Uses of photography in ophthalmological measurements. N. I. Gerasimov and V. G. Kolomatskiy (Military Political Academy im. V. I. Lenin). Applications of stereoscopy in criminology. Prof. D. D. Saratovkin (Tomsk Polytechnic Institute). Applications of stereo photography in crystallography. Yu. Ye. Sviridov, Ye. V. Shatrov, and G. M. Kamfer (Moscow Automobile and Highway Institute). Recording of

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the combustion process by means of stereo motion pictures. A. S. Dubovik and V. V. Garnov (Institute of Physics of the Earth, Academy of Sciences SSSR). Present state of and prospective developments in high-speed stereo filming. Prof. V. G. Ginzburg (Scientific Research Institute of Roentgenology and Radiology). X-ray stereo photography. V. V. Garnov and Ye. D. Fedin (Institute of Physics of the Earth, Academy of Sciences SSSR). High-speed x-ray stereo photography. B. M. Muratovskiy (Moscow Studio of Popular-Science Films). Adaptation of the Pentacet-35 camera for stereo filming. I. A. Maysov (Moscow Institute of Engineers of Geodesy, Aerial Photography, and Cartography). Stereo television in investigations of volume and plant images. K. K. Shal'nev and A. A. Milovidov (Institute of Mechanics and Laboratory of Applied Photography and Motion Pictures, Academy of Sciences SSSR). High-speed macro motion-picture filming in two perpendicular projections. G. L. Khesin and I. Kh. Kostin (Moscow Institute of Civil Engineering). Use of two-position super-high-speed motion-picture filming in the investigation of dynamic stresses by the photoelasticity method. The next conference on stereo motion-picture and still photography will take place in the first half of 1965.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: ES, GO

NO REF SOV: 000 OTHER: 000 FSB v. 1, no. 2

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SAKHAROV, A.A.

Conference on the application of stereoscopic motion pictures and photography in scientific research. Zhur.nauch. i prikl.fot. i kin. 9 no.6:472-473 N-D '64. (MIRA 18:1)

SAKHAROV, A.

"Make Fuller Use of Reserves in Steel Smelting" -- by Ie. Dikshtein, Chief Steel Smelter at the Stalin Steel Combine in Magnitogorsk, A. Leskov, Manager of Open-Hearth Shop at the Ordzhonikidze Steel Mill in Zaporozhye, and A. Sakharov, Chief Steel Smelter at the Stalin Steel Combine in the Kuznetsk Basin.
Pravda, 24 April 55, p. 2.

SO: Current Digest of Soviet Press, 8 Jun 55, Vol. VII, #17, Unclassified

Sakharov A.A.

AUTHORS: Morachevskiy, Yu. V., Sakharov, ~~A. A.~~ 75-1-13/26

TITLE: The Polarographic Determination of Uranium in the Presence of Vanadium and Iron (Polyarograficheskoye opredeleniye urana v prisutstvii vanadiya i zheleza)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol 13, Nr 1, pp 83-87 (USSR)

ABSTRACT: The polarographic determination of uranium usually takes place after its first wave with a half-wave potential of -0,2 V the height of which in neutral and weakly acid solutions is proportional to the concentration of uranium. Trivalent iron in acid solutions covers the polarographic wave of uranium by the wave which corresponds to its reduction to the bivalent stage. The polarographic wave of bivalent iron exercises no influence upon the wave of uranium (refs. 1-4). The disturbing action of iron can therefore be eliminated by its reduction to the bivalent stage. Pentavalent vanadium also disturbs the measurement of the height of the wave of uranium. In the presence of tetravalent vanadium the limit

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The Polarographic Determination of Uranium in the Presence of Vanadium and Iron 75-1-13/26

current of the reduction of uranium is not proportional to the concentration which makes direct determination of uranium by a measurement of the height of the wave impossible. The authors showed that the increase in the limit current of the reduction of uranium is caused by a chemical red-ox--reaction of pentavalent uranium with ions of tetravalent vanadium at the surface of the electrode (reference 5). In the present work 2 variants of the polarographic method of determination for uranium in the presence of vanadium and iron were worked out: 1) In this method the disturbing influence of vanadium is removed by maintaining its concentration in the solution constant. Iron is neutralized by reduction to the bivalent stage by means of sulfurous acid. In the case of a high content of tetravalent vanadium the curves of the connection between limit current and concentration of uranium are well reproducible and may therefore serve as calibration curves for the determination of the uranium content of the solution. For this purpose a constant concentration of tetravalent vanadium in the solution to be investigated is necessary. Therefore the vanadium content of the solution is previously determined after which so many

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The Polarographic Determination of Uranium in the Presence of Vanadium and Iron 75-1-13/26

vanadium ions are added as are necessary for attaining the desired final concentration. The optimum concentration of vanadium for the polarographic determination of uranium amounts to 0,01 moles. The polarographic determination is carried out in a thermostat, as changes of temperature change the value of the limit current very much. This method as compared to the usual polarographic methods of uranium determination is distinguished by a higher sensitivity which is due to the presence of vanadium in the solution, whereby the limit current of the reduction of uranium is increased. This method may especially serve for the determination of uranium in solutions which do not contain more than 1o mg vanadium with a uranium content of 0,o1 - 1 mg. These limits are due to the impossibility of measuring very low and very high values of the limit current. 2) This method is based on a previous reduction of the solution to be investigated on a mercury cathode and on the subsequent determination of uranium on the basis of the value of the anode-cathode-wave U(III)/U(IV) with a half-wave potential of -0,97 V. Measurement of the height of the wave of tetravalent uranium

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The Polarographic Determination of Uranium in the Presence of Vanadium and Iron 75-1-13/26

is according to this method possible in the case of any content of vanadium, as vanadium is reduced to the bivalent stage. Employment of the anode-cathode wave U(III)/U(IV) for the polarographic determination of uranium is possible only on certain conditions. Investigations showed that these conditions are best satisfied in a 0,1 - 0,5 normal sulfurous solution. It was also shown that independent of the concentration ratio U(IV):U(III) in the solution the value of the total limit current remains constant. The presence of magnesium, aluminum, copper, titanium and manganese in the solution of uranium exercises no influence upon its polarographic determination after a previous electrolysis of the solution. This method is suitable for the determination of uranium quantities above 0,4 mg. The apparatus used for the electrolytic reduction and the polarographic determination of uranium is drawn and described. There are 1 figure, 5 tables, and 6 references, 2 of which are Slavic.

ASSOCIATION: Leningrad State University imeni A. A. Zhdanov (Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova)

Card 4/5

The Polarographic Determination of Uranium in the Presence of Vanadium and Iron 75-1-13/26

SUBMITTED: January 2, 1957

AVAILABLE: Library of Congress

1. Uranium - Determination 2. Polarographic analysis - Applications

Card 5/5

AUTHORS: Morachevskiy, Yu. V., Sakharov, A. A. SOV/75-13-4-15/29

TITLE: The Influence of Tetravalent Vanadium on the Reduction of Uranium on a Dropping-Mercury Electrode (Vliyaniye chetyrekhvalentnogo vanadiya na vosstanovleniye urana na kapel'nom rtutnom elektrode)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol. 13, Nr 4, pp. 457-463 (USSR)

ABSTRACT: In weakly acid solutions uranyl salts yield 2 polarographic waves with half-wave potentials at -0,19 V and -0,92 V as related to a saturated calomel electrode. The first of these waves corresponds to the reversible reduction of the uranyl ion to the pentavalent uranium ion, while the second wave corresponds to two consecutive stages of the further reduction of pentavalent uranium to the tetravalent and trivalent stage (Refs 1-4). The polarographic determination of uranium is usually carried out by means of the first wave the height of which in neutral and weakly acid solutions is proportional to the concentration of uranium (Refs 1, 5-7). The presence of vanadium in pentavalent as well as in tetravalent form renders difficult the polarographic determination of uranium as it effects an in-

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SOV/75-13-4-15/29

The Influence of Tetravalent Vanadium on the Reduction of Uranium on a Dropping-Mercury Electrode

creased limiting current and causes the formation of another wave at -0,5 V (as related to a saturated calomel electrode) which is lacking in the polarograms of vanadium itself as well as in the polarograms of penta- and tetravalent vanadium. The reason for this phenomenon is still unknown. Vinogradov (Ref 8) points to the possibility of the polarographic determination of uranium in the presence of vanadium in lactic acid medium. In the present paper the graphical analysis of the polarographic wave of hexavalent uranium is carried out in the presence of tetravalent vanadium, as well as an analysis of the second additional wave. It was found that the wave of uranium, also in the presence of vanadium, corresponds to the reversible reaction process of the uranyl ion to pentavalent uranium, whereas the additional wave of the reduction of trivalent vanadium corresponds to the bivalent stage. Based on the graphical analysis of the polarographic waves of solutions containing uranium and tetravalent vanadium it was shown that the cause for the increase of the wave of uranium is to be found in a chemical oxidation reaction of pentavalent uranium by tetravalent vanadium at the surface of the dropping-mercury electrode. The velocity

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SOV/75-13-4-15/29

The Influence of Tetravalent Vanadium on the Reduction of Uranium on a Dropping-Mercury Electrode

of this reaction together with the diffusion process determines the quantity of the limiting current. The possibility of such a redox reaction was demonstrated by the amperometric titration of pentavalent uranium with a solution of the sulfate of tetravalent vanadium. The results obtained from the investigations of the influence exerted by the acidity of the solution as well as by the temperature on the limiting current also emphasize that in the space around the electrode a chemical reaction takes place. The work was carried out by means of a polarograph of the "Geologorazvedka" factory of the type **SGM**-8. All investigations carried out are described in detail. The authors learned that V. G. Sochevanov and N. V. Shmakova in papers published in 1953 had reached a similar result with respect to the mechanism of the influence of vanadium on the reduction of uranium at a mercury-dropping electrode. There are 4 figures, 3 tables, and 20 references, 3 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

Card 3/4

SOV/75-13-4-15/29

The Influence of Tetravalent Vanadium on the Reduction of Uranium on a Dropping-Mercury Electrode

SUBMITTED: January 2, 1957

1. Uranium--Electrochemistry 2. Uranium--Determination
3. Vanadium--Chemical effects 4. Mercury electrodes--Applications
5. Oxidation-reduction reactions 6. Polarographic analysis

Card 4/4

5(2) SOV/32-25-7-6/50

AUTHOR: Sakharov, A. A.

TITLE: Polarographic Determination of Micro-amounts of Copper, Lead, Zinc in the Presence of Iron (Polyarograficheskoye opredeleniye mikrokolichestv medi, svintsa i tsinka v prisutsvii zheleza)

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 791-792 (USSR)

ABSTRACT: A method was developed for the determination of microgram amounts of Cu, Pb, and Zn in solutions containing greater amounts of Fe, without a previous separation. Cu and Pb can be determined by means of an ammoniacal Seignette salt solution. For the determination of Pb and Zn a weakly acid of neutral solution of ascorbic acid is recommended. Traces of oxygen have to be removed from the solution because of the low concentration of the elements to be determined, which in this case was achieved by means of metol. Zn is reduced on the drop electrode at about -1 v, while it needs -1,5 v for the reduction of Fe^{2+} which therefore does not interfere with the determination of Zn. The experiments showed that the influence of oxygen on the polarogram in 10-20 is eliminated with pH 5-7 of the solution containing ascorbic acid and iron. The courses of the analysis for the determination of Cu and Pb are given, as well as for the

Card 1/2

Polarographic Determination of Micro-amounts of Copper, Lead, Zinc in the Presence of Iron

SOV/32-25-7-6/50

determination of Pb and Zn. Acid extracts of mud and sand samples were analyzed according to the described method, (Tables 1,2) and it was found that a hundredfold and thousandfold excess of iron does not disturb the determination with regard to the Cu, Pb and Zn content. There are 2 tables and 4 references, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki (All-Union Scientific Investigation Institute of the Methods and the Technology of Prospecting)

Card 2/2

SAKHAROV, A.A.

Improving the performance of open-hearth furnaces. Metallurg 5 no.8:12-13 Ag '60. (MIRA 13:7)

1. Cherepovetskiy metallurgicheskiy zavod.
(Open-hearth furnace)

SAKHAROV, A.A., inzh.

Accelerating the production of steel in opne hearth furnaces. Stal' 23 no.6:508-509 Je '63. (MIRA 16:10)

1. Cherepovetskiy metallurgicheskiy zavod.

SAKHAROV, A.A., inzh.; MAL'CHENKO, T.V., inzh.; MOKRUSHIN, K.V., inzh.;
DUBOV, B.G., inzh.; BABICH, L.S., inzh.

Improving the construction of high-capacity open-hearth furnaces of the Cherepovets metallurgical plant. Stal' 25 no.8:694-697 Ag '65. (MIRA 18:8)

D'YAKONOVA, V.S., inzh.; SAKHAROV, A.A., inzh.; MAL'CHENKO, T.V., inzh.;
MEL'NIKOV, O.A., inzh.; SIVTSOV, G.V., inzh.; IONTS, Ye.P., inzh.

Technology of the production, and properties of 17GS steel for welded gas and oil pipelines. Stal' 25 no.8:740-744 Ag '65.
(MIRA 18:8)

1. Cherepovetskiy metallurgicheskiy zavod.

SAKHAROV, Aleksandr Borisovich; SHURAKOVA, T.P., red.; BYKOVA, V.V., tekhn. red.

[Industrial safety law in the U.S.S.R.] Ugolovno-pravovaia okhrana bezopasnosti uslovii truda v SSSR. Moskva, Gos.izd-vo iurid.lit-ry, 1958. 184 p. (MIRA 12:2)
(Industrial safety--Law and legislation)

SAKHAROV, A. B.

Dissertation defended for the degree of Doctor of Juridicial Sciences
at the Institute of Government and Law

"Personality of the Criminal and Causes of Criminality in the USSR."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

SAKHAROV, A.B., kandidat tekhnicheskikh nauk.

Experimental investigation of vibration in the tugboat "Dzhardzhan." Trudy GIIVT no.12:106-117 '54. (MLRA 10:2)

(Tugboats--Vibration)

DAVYDOV, V.V., doktor tekhn. nauk; SAKHAROV, A.B., kand. tekhn. nauk

Using damping devices to lessen ships' vibrations. Sudostroenie 27 no.2:25-30 F '61. (MIRA 16:7)

(Vibration(Marine engineering))

SAKHAROV, A.B., kand.tekhn.nauk

Unbalance of engines under the effect of shafts' torsional vibrations. Sudostroenie 29 no.2:34-37 F '63. (MIRA 16:2)
(Marine engines) (Vibration (Marine engineering))

SAKHAROV, A. D.

"Electrical Breakdown in Ionic Crystals," Referaty Otdeleniya Fiziko-Matematicheskikh Nauk Akademii Nauk SSSR, page 15, 1945

Physics Institute imeni Lebedev, As USSR

SAKHAROV, A. D.

"Theory of Nuclear Transitions of the 00 Type." Sub 3 Nov 47, Physics Inst imeni P. N. Lebedev, Acad Sci USSR

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

PROCESSES AND PROPERTIES INDEX

N

8

1067. The Generation of the Hard Component of Cosmic Rays (Generatsiia Zhestkoi komponenty kosmicheskikh luchei) by A Sakharov. Zhur Eksptl i Teoret Fiz 17 686-697 (1947) (In Russian)

The generation of the hard component of cosmic rays by photons and nucleons in the relativistic region and near the border of generation is investigated in the case of two certain assumptions concerning interaction of nucleons.

Physics Inst. im Lebedev, AS USSR

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

SAKHAROV, A-D.

N

1680. **Interaction between Electron and Positron during Pair Production, by A. D. Sakharov.** Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki 18, p. 631-635, July 1948. (In Russian)

In the calculation of the differential probability of pair production the interaction between components has never been taken into account. The effect of this interaction can only be significant at small values of the relative velocity, v, of the components in the final state. The interaction itself may therefore be regarded as the Coulomb force e^2/r. For processes of the first order, the author gives a correction factor, $T = 2\pi\epsilon/(1-e^{-2\epsilon\pi})$, where $\epsilon = e^2/v$. This result is then confirmed for processes of the second and higher orders. The interaction between components in the intermediate state is found to be insignificant. Finally, the spin and relativistic effects are discussed.

Physics Inst. im. Lebedev, AS USSR

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SAKHAROV, A. D.

Jul/Aug 48

USSR/Physics
Plasma Gels
Spectrumure

"Excitation Temperature in the Gas Discharge Plasma," A. D. Sakharov, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

PA 53/49T98

"Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 4

In the case of thermodynamic equlibrium between components of the plasma, the optically measured value is the true temperature of the plasma. When thermodynamic equilibrium does not exist between electrons, on one hand, and atoms and molecules, on the other, i.e., the condition which holds for low-pressure plasma, the significance of the optically

53/49T98

[redacted]

USSR/Physics (Contd) Jul/Aug 48

measured temperature (the excitation temperature) is not clear. Finds that measuring excitation temperature for atomic lines actually relates to the temperature of electrons.

53/49T98

[redacted]

CAND PHYSICOMATH SCI.

SAKHAROV, A.D.

Dissertation: "Theory of Nuclear Transitions of the OO Type."

3 November 49
Physics Inst imeni P.N. Lebedev, Acad Sci USSR.

SO Vecheryaya Moskva
Sum 71

L 27750-66 FBD/EWT(1)/EPF(n)-2 WW/GW/WS-2

ACC NR: AP6018702 SOURCE CODE: UR/0386/66/003/011/0439/0441

61
B

AUTHOR: Sakharov, A. D.

ORG: none

TITLE: Maximum temperature of thermal radiation

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3. no. 11, 1966, 439-441

TOPIC TAGS: cosmic radiation, cosmology, thermal radiation, hot star, gravitation effect, photon

ABSTRACT: In view of the interpretation of recently observed cosmic radio emission with effective temperature 3.5K at 7.3 cm wavelength (A. A. Panzias and R. Wilson, Astrophys. J. v. 142, 419, 1965) as being of thermal nature, the authors analyze briefly the properties of hot matter at very high densities, including such that the gravitational interaction of the photons becomes significant. A power expansion is derived for the energy density within the framework of gravitational perturbation theory, consisting of terms corresponding to the Stefan-Boltzmann equation, exchange correlation, and correlation corrections. It is shown that at high photon-gas densities the increase of energy density slows down and the derivative of the energy with respect to the gas density goes through a maximum. An estimate is also presented for the maximum temperature that any substance in equilibrium with radiation can attain, and a value of 1.42×10^{32} degrees is obtained. Orig. art. has: 2 formulas.

SUB CODE: 20/ SUBM DATE: 01Apr66/ ORIG REF: 001/ OTH REF: 001

Card 1/1

SAKHAROV, A.

"From Current Foreign Literature: Observations of Cosmic Radiation by Means of 'Photo-plastics' Sonstived to Electrons," as digested from works by Powell et alii (Nature). USPEKHI FIZ. NAUK, 38 No. 3, 1949.

SAKHAROV, A. D.

"Isotopic Shift in the Uranium Spectrum," Uspekhi Fiz. Nauk., 38, No.4, 1949

56-4-51/52

SAKHAROV, A.D.

AUTHOR: ZEL'DOVICH,Ya.B., SAKHAROV,A.D.

TITLE: On the Reactions Caused by Myons in Hydrogen.
(O reaktsiyakh, vyzyvayemykh myonami v vodorode, Russian)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 4,
pp 947 - 948 (U.S.S.R.)

ABSTRACT: If a myon exists, the shape of the potential barrier, by which a
nuclear reaction of slow p- and D nucleons is prevented, changes.
Penetrability of the barrier then increases and the following re-
actions are possible: p + D = He^3, D + D = He^3 + n, D + D = T + p.
If tritium exists, also the following reactions are possible:
D + T = He^4 + n, T + T = He^4 + 2n, p + t = He^4. Experimental data
obtained by L.W.ALVAREZ et al. (lithographic manuscript,
December 1956) show the following result: In natural hydrogen, an
average of one act p + D = He^3 corresponds to 150 mesons, in
hydrogen with D-content, 1:300 and 1:20 correspond to 40 and 33
mesons respectively. The energy of the creation of He^3(5,4 MeV)
is taken along by the myon, so that monochromatic myons are ob-
served on the occasion of the reaction. The relatively high
probability of reaction in the natural mixture is explained by the
transition of the meson from hydrogen to the deuteron. The authors
here give a rough evaluation of the transition probability. Next,
the nuclear reaction in the molecule $pD\mu$ is discussed and the

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P.

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Ca Card 1/2

SAKHAROV, A.D.

21(7) PHASE I BOOK EXPLOITATION SOV/1241

Akademiya nauk SSSR. Institut atomnoy energii

Fizika plazmy i problema upravlyayemykh termoyadernykh reaktsiy, t.I. (Plasma Physics and the Problem of Controlled Thermonuclear Reactions, v. 1) [Moscow] Izd-vo AN SSSR, 1958. 300 p. 3,000 copies printed.

Resp. Ed.: Leontovich, M.A., Academician.

PURPOSE: This collection contains previously unpublished work of members of the Institut atomnoy energii (Institute of Atomic Energy) of the Academy of Sciences of the USSR. It is intended for scientists interested in this field.

COVERAGE: This book is the first of four volumes of a collection of articles on theoretical and experimental investigations of problems of controlled thermonuclear reactions and associated questions of plasma physics. The research reported on was conducted during 1951-1958 at the Institute of Atomic Energy. Only papers not previously

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Davydov, B.I. Ignition of an Electrodeless Discharge 89

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Zubarev, D.N., and V.N. Klimov. Toward a Theory of a Temperature Jump in the Plasma Boundary in a Magnetic Field 138

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Braginskiy, S.I. Flows of Particles and Heat Across a Strong Magnetic Field in a Completely Ionized Two-temperature Plasma 178

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Braginskiy, S.I., and G.I. Budker. Physical Phenomena in the Process of Ignition of a Discharge in the Case of Incomplete Ionization 186

Leontovich, M.A., and V.D. Shafranov. Stability of a Flexible Conductor in a Longitudinal Magnetic Field 207

Budker, G.I. Disruptive Discharge in a Gas in the Presence of a Strong External Magnetic Field, Variable With Time 214

Leontovich, M.A. Magnetic Field of a Linear Current Surrounded by an Ideally Conducting Cylinder With a Gap 222

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Budker, G.I. Thermonuclear Reactions in a Potential Hole of a Negative Charge 243

Zubarev, D.N., and V.N. Klimov. Stationary Regimes of a Magnetic Thermonuclear Reactor 249

Trubnikov, B.A. Instability of a Plasma Cylinder 289

AVAILABLE: Library of Congress (QC794.A38)

IS/ksv
3-6-59

Card 6/6

AUTHOR: Sakharov, A.D. SOV / 89-4-6-10/30

TITLE: Radioactive Carbon From Nuclear Fission Tests and "Thresholdless" Biological Effects (Radioaktivnyy uglerod yadernykh vzryvov i neporogovyye biologicheskiye effekty)

PERIODICAL: Atomnaya energiya, 1958, Vol. 4, Nr 6, pp. 576-580 (USSR)

ABSTRACT: In connection with every "atomic explosion" a large number of neutrons is produced which, together with the nitrogen contained in the air, produce radioactive carbon in accordance with the reaction N^{14} (n,p)C^{14}. This radioactive carbon comes into contact with the skin and, in the course of disintegration, produces a measurable dose of (7.5) · 10^{-4} r per megaton of the exploded bomb. Calculation of the losses of human life by the effect of C^{14} is based upon the following assumptions:

1.) In the course of the coming thousand years the total population of the earth will amount to 30 billion persons.

2.) Irradiation of reproductive glands with a dose of 1 r causes 10^{-4} cases of sickness among descendants.

3.) Losses are trebled by other "thresholdless" biological effects,

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Radioactive Carbon From Nuclear Fission Tests and "Thresholdless" Biological Effects

SOV/89-4-6-10/30

as e.g. the change of genes by one single act of ionization, increase of the number of cases of cancer and leukaemia. The number of persons afflicted with hereditary diseases caused by only one MT bomb was calculated to amount to 2,200. If all possible effects and all explosions which have hitherto occurred are taken into account, it will be found that the total losses of human life amount to 330,000; if also the victims of Sr^{90} contamination are included, total losses will be found to amount to 500,000 persons. There are 7 references, 3 of which are Soviet.

SUBMITTED: July 8, 1958

1. Carbon isotopes (Radioactive)--Physiological effects 2. Atomic bomb explosions--Pathological effects 3. Radiation --Genetic factors

Card 2/2

SAKHAROV, A. D.

"Radioactive Carbon of Nuclear Explosions and Non-Threshold Biological Effects."

Soviet Scientists Concerning the Dangers of Nuclear-Weapon Tests, p. 31, Publishing House of the Main Administration for the Use of Atomic Power, Council of Ministers USSR, Moscow 1959.

L 21082-65 EWP(m)/EPR/EWA(h)/EWP(k)/EWT(l)/EWT(m)/FCS(k)/EWP(b)/EWA(d)/
EWP(t) Pd-1/Pf-4/Pi-4/Ps-4 IJP(c)/AFWL/SSD/AEDC(a)/SSD(b)/ASD(f)-3/
ASD(p)-3/AFETR/AFTC(p) JD/HW

ACCESSION NR: AP5001511 S/0020/64/159/005/1019/1022

AUTHORS: Sakharov, A. D. (Academician); Zaydel', R. M.; Mineyev, V. N.; Oleynik, A. G. 8

TITLE: Experimental investigation of the stability of shock waves and mechanical properties of substances at high pressures and temperatures

SOURCE: AN SSSR. Doklady, v. 159, no. 5, 1964, 1019-1022

TOPIC TAGS: shock wave propagation, shock wave stability, high pressure research, high temperature research, aluminum 21

ABSTRACT: The purpose of the research to compare experimental data on stability of a shock wave in condensed matter with the results of calculations for an ideal liquid, so as to gather information on the mechanical properties of substances under high pressures and temperatures behind the shock front. The experimental setup is shown in

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L 21082-65
ACCESSION NR: AP5001511

Fig. 1 of the enclosure and was constructed to satisfy boundary conditions wherein the front surface has a sinusoidal profile at $t = t_0$, and the flow behind and ahead of the front is constant. The calculations for comparison with the experiment were made in a linear approximation in which $2\pi a/\lambda \ll 1$ (a -- amplitude of disturbance, λ -- wavelength). The experiment consisted of inducing a shock wave by means of an explosive charge in a wedge and a disc cut from the investigated material and taking streak photographs of the glow produced by the shock wave. By suitable choice of the length and diameter of the explosive charge, the disc diameter, and other parameters it is possible to ensure constant flow behind the front so as to reconcile the calculations with the experiment. The best results were obtained with AL-9 aluminum (90% aluminum), at a pressure on the wave front of 310,000 atm, temperature 630K, and density 3.4 g/cm^3. The experimental plots of the relative amplitude of the disturbance against the distance had the same shape as the theoretical curve, but the numerical values differed. An analysis of empirical equations

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0

written for the experimental curves shows that the difference lies essentially in the terms that depend on the Reynolds number and other material characteristics, and that the coefficients corresponding to the constant terms are close to those for an ideal liquid. Other applications of this method are discussed briefly and will be reported in the future. Orig. art. has: 4 figures, 3 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 22Sep64 ENCL: 01

SUB CODE: MM, ME NR REF SOV: 004 OTHER: 001

L 21082-65
ACCESSION NR: AP5001511

ENCLOSURE: 01

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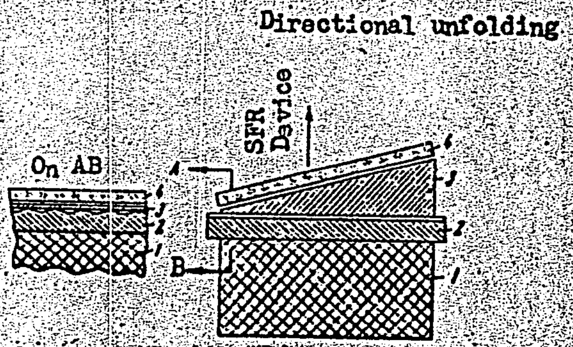

Fig. 1 : Experimental setup. 1 - Charge v. v.;
2 - Disc with grooves; 3 - wedge;
4 - organic glass plate

Explosive forming 18

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L 2216-66 EWT(1) GW

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15
B

UR/0056/65/049/001/0345/0358

ACCESSION NR: AP5019251

AUTHOR: Sakharov, A. D. 55

TITLE: Initial stage of an expanding universe and appearance of a nonuniform distribution of matter

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 1, 1965, 345-358

TOPIC TAGS: cosmogony, stellar evolution, galactic mass, galactic structure

ABSTRACT: The author investigates a hypothesis whereby astronomical bodies are created as a result of gravitational instability of the expanding universe. The initial inhomogeneities are assumed to result from quantum fluctuations of cold baryon-lepton matter at densities on the order of 10^{98} baryons/cm^3. It is suggested that at such densities the gravitational effects are of decisive importance in the equation of state and that the energy density may vanish for some finite value of the baryon density. A theoretical estimate yields initial inhomogeneities of such a scale that clusters of 10^{62}--10^{63} baryons (10^5--10^6 solar masses) become possible. This calculated mass is smaller than that of the galaxies by a factor of 10^5--10^6, and is in fact closer to the masses of spherical clusters. A hypothesis is proposed that galaxies are produced as a result of an increase in the

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L 2216-66

ACCESSION NR: AP5019251 6

inhomogeneities of the motion and of the distribution of the gas formed during gravitational collapses of the primordial stellar clusters. According to this hypothesis, the plane component of the galaxy is produced from the gas, whereas the spherical component consists mainly of clusters of primordial stars captured by the gravitational field of the rotating gas cloud. "The author thanks Ya. B. 55 Zel'dovich, I. Ye. Tamm, 55 and Ye. M. Lifshits for discussions and valuable remarks." Orig. art. has: 1 figure and 45 formulas. 55

ASSOCIATION: none

SUBMITTED: 02Mar65 ENCL: 00 SUB CODE: AA

NR REF SOV: 004 OTHER: 000

Card 2/2 BP

L 7085-66 EWT(1) IJP(c)

ACC NR: AP5027837 SOURCE CODE: UR/0020/65/165/001/0065/0068

44,55 44,55 44,55 44,55

AUTHOR: Sakharov, A. D. (Academician); Lyudayev, R. Z.; Smirnov, Ye. N.; Plyushchev, Yu. I.; Pavlovskiy, A. I.; Chernyshev, V. K.; Feoktistova, Ye. A.; Zharinov, Ye. I.; Zysin, Yu. A.

44,55 44,55 44,55 44,55 44,55

ORG: none

9/
B

TITLE: Production of very high magnetic fields by explosives

SOURCE: AN SSSR. Doklady, v. 165, no. 1, 1965, 65-68

TOPIC TAGS: pulsed magnetic field, flux compression, high field pulse, implosive flux compression, explosive flux compression, betatron particle acceleration, high density plasma, plasma accelerator/ MK 1, MK 2

26 26 10

ABSTRACT: Experiments with the MK-1 and MK-2 explosion devices for the production of very high magnetic field pulses are described. The MK-1 device, which is based on the implosion of an axial flux within a metal shell, essentially resembles the arrangement described by Fowler and others (J. Appl. Phys. 31, 1965, 588). The MK-2, which works on the principle of the expulsion of the field from the solenoid and the subsequent compression of the field by the walls of the coaxial liner, is described here for the first time. Field intensities of 1 x 10^6 oe were obtained in experiments with an MK-1 using aluminum liners about 100 mm in diameter. In a subsequent experiment with a stainless steel liner with a copper plated inner surface, a field intensity of

21,44,55

Card 1/3 UDC: 538.4

2

25×10^6 oe was achieved by imploding the liner to a 4-mm diameter. A field intensity of 5×10^6 oe in a volume of 100 cm^3 was produced by a copper liner 300 mm in diameter, using the MK-2 as the source of the initial field. The MK-2 has a central conductive cylinder enclosed in a coaxial helical solenoid. On one end of the solenoid is a solid cup. A hole in the bottom of the cup holds the end of the central cylinder (see Fig. 1). The central cylinder is filled with an explosive which is ignited from the end opposite that holding the cup. The solenoid cylinder system forms the circuit through which a battery of capacitances is discharged. At the peak value of the discharge current, the expanding conical flare of the cylinder created by the propagating explosion touches the end of the solenoid. The explosion's further development is equivalent to moving a cone into the solenoid and shorting its turns until the cone reaches the cup. At this moment a coaxial is formed whose length and inductance grow smaller as the detonation propagates further along the cylinder. The process is accompanied by a corresponding increase in current and field intensity resulting from compression of the flux. Currents of 5×10^7 amp (occasionally up to 1×10^8 amp) at an inductance value of 0.01 μH were obtained, and field intensities of 1 to

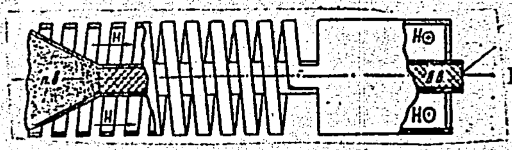

Fig. 1. The MK-2 device

L 7085-66

ACC NR: AP5027837

1.5×10^6 oe were recorded within a volume of several liters. An energy of 1 to 2×10^7 J was stored in the field, which amounts to about 10 to 20% of the energy released during the propagation of the explosion within the length of the cup. A receiver of electromagnetic energy was connected to the MK-2 directly or via a transformer, depending on whether the receiver was of low or high inductance. About 50% of the explosive energy was transferred to the receiver by the latter method, which also permits a spatial separation of the sender and makes possible multi-stage arrangements. In the first stage, the initial field is created by a permanent magnet. The second and the subsequent stages amplify the field received from the preceding stage. Energy transfer was also accomplished by breaking the current-carrying circuit by means of an additional explosive charge and using the breaking surge for the transfer. More than 50% of MK-2 output was transferred by this method. A special MK device has been created for iron-free air core betatrons as described by Pavlovskiy and others (DAN, 160, no. 1, 1965, 68), and experiments have been carried out with electrodynamic accelerators of the coaxial type. Orig. art. has: 3 figures. [FP]

SUB CODE: EM, NP/ SUBM DATE: 23Aug65/ ORIG REF: 002/ OTH REF: 001/ ATD PRESS: 4143

nw

Card 3/3

ACC NR: AP6014162 SOURCE CODE: UR/0053/66/088/004/0725/0734

AUTHOR: Sakharov, A. D.

ORG: none

TITLE: Magnetoimplosive generators

SOURCE: Uspekhi fizicheskikh nauk, v. 88, no. 4, 1966, 725-734

TOPIC TAGS: strong magnetic field, magnetic field generation, explosion application, nuclear explosion, particle acceleration

ABSTRACT: The author reviews the physical and structural principles of magnetoimplosive generators and their characteristics, and touches upon problems involving their application. The first use of explosions to produce ultrastrong magnetic fields in the SSSR, essentially in the form of the MK-1 generator, which produced a field of 1 million gauss, as well as subsequent modification (MK-2), which produced a field up to 2 million gauss, are briefly described and the theory of production of ultrastrong fields by means of explosions is detailed. Possible applications of such generators are the measurements of properties of substances in very strong fields, launching of metallic bodies at escape velocities, and a supply of very high power to elementary particle accelerators and to measurement and recording apparatus. The latter application, in the author's opinion, is the most important. It is estimated that 50 - 100 magnetoimplosive experiments on particle acceleration to approximately 1000 Gev can be produced (using an underground thermonuclear explosion) at a cost comparable with that

Card 1/2 UDC: 538.12

Card 2/2

S/262/62/000/007/009/016
I007/I207

AUTHOR: Sakharov, A. G.

TITLE: Basic laws of fuel injection

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustanovki, no. 7, 1962, 71, abstract 42.7.376. "Dokl. Mosk. s. kh. akad. im. K. A. Timiriya-zeva", no. 66, 1961, 103-117

TEXT: The theoretical substantiation for fuel injection laws is given; it is shown that these laws should be derived from the condition of optimum combustion processes, by studying indicator diagrams. Fuel injection not only depends on the shape of the feeding cam and its interaction with the pusher and plunger of the fuel injection pump, but also on the strongly distorting effect of the fuel feeding line and nozzle. In deriving the laws, the needle of the fuel nozzle is assumed to act as a spring-loaded valve. The fluctuations, generated by the displacement of both the valve and its seat, superimpose over the fluctuations in the fuel feeding line. Hence, the fuel feeding system should ensure the proper law of fuel injection into the engine. There are 11 figures and 5 references.

[Abstracter's note: Complete translation.]

Card 1/1

S/262/62/000/004/014/024
I014/I252

AUTHOR: Sakharov, A. G.

TITLE: Dependence of pump losses in internal combustion engines on piston acceleration

PERIODICAL: Referativnyy zhurnal, Silovyye ustanovki, no. 4, 1962, 53, abstract 42.4.311 "Dokl. Mosk. s-kh. akad. im. K.A. Timiryazev" 1960, no. 55, 183–192

TEXT: Theoretical investigation of pump losses and verification of the relationships obtained, on the basis of experimental data on the КДМ-46 (KDM-46) and Д-35 (D-35) Diesel engines, the ЗИС-5 (ZIS-5) carburettor engine and the S/D = 150/110 mm Diesel engine. Pump losses (total, intake and exhaust losses) in carburettor and Diesel engines show linear dependence on the mean conventional piston acceleration. The formulas derived for determining the above losses have a single empirical coefficient, constant for each specific type of engine. The coefficient is calculated for several engines. There are 6 figures and 5 references.

[Abstracter's note: Complete translation.]

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Card 1/1

S/262/62/000/004/011/024
I014/I252

AUTHOR: Sakharov, A. G.

TITLE: Investigation of the expansion process according to indicator diagrams of internal combustion engines

PERIODICAL: Referativnyy zhurnal, Silovyye ustanovki, no. 4, 1962, 52, abstract 42.4.305. "Dokl. Mosk s.-kh. akad. im. K. A. Timiryazeva" 1960, no. 55, 221–246

TEXT: The process of pressure variation during expansion in the cylinder of a crank-and-rod internal combustion engine consists of distinct regions, differing in process conditions. In these circumstances, it is impossible to assume a single overall exponent of polytropic expansion for the whole process. Each region is characterized by its own of variation of the polytropic exponent. Pressure variation in the cylinder obeys an exponential law but is subject to distortions due to after-burning of the mixure, to the action of the crank-and-rod mechanism and to opening of the exhaust valve. The basic formula derived permits plotting of the pressure variation during the expansion process, on the bases of the given initial conditions (P_0 and α_0) and of the mean indicated pressure characteristic of the given engine type. The coefficient K_p, characterizing the gas expansion process, equals the quotient of maximum cylinder pressure and work done by this pressure during expansion. The following Diesel engines were investigated: Д-38 (D-38) (1407 rpm, 36.2 HP, fuel consumption $G_m = 8.2$ kg/hr) and Д-54 (D-54) (1300 rpm, 52.2 HP, $G_m = 10.9$ kg/hr), as well as the M-1 carburettor engine (2000 rpm, 53 HP, $G_m = 13.4$ kg/hr).

[Abstracter's note: Complete translation.]

Card 1/1

L 29974-66 EWT(d)/EWT(m)/EWP(f)/T WE
ACC NR: AP5025470 SOURCE CODE: UR/0273/65/000/008/0027/0027

51
B

AUTHOR: Sakharov, A. G.

TITLE: Study of the D-37M diesel engine with a direct injection and gasoline-diesel direct-injection processes.

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya, Abs. 8.39.216

REF SOURCE: Dokl. Mosk. in-ta inzh. s.-kh. proiz-va, v. 1, no. 2, 1964, 29-45

TOPIC TAGS: diesel engine, engine cooling system, engine fuel system, air-cooled engine, diesel fuel, gasoline / D-37M diesel engine

ABSTRACT: The gasoline-diesel process with a direct injection of diesel fuel is studied on the D37M air-cooled diesel engine. Two diesel engines manufactured by the Vladimir Tractor Factory were used in this test. The operational reliability of the D37M engine is not negatively affected by working on a gasoline-diesel process, and it is comparable to a diesel process. Because of higher performance and higher fuel consumption in the gasoline-diesel process, the D37M engine tends to overheat, especially when the surrounding air is hot. Hence, the air cooling system must be strictly checked, and the temperature stress of the engine has to be under constant control.

SUB CODE: 21/ SUBM DATE: none

Card 1/1 20

L 36298-66 EWT(m)/T WE

ACC NR: AR5025469 SOURCE CODE: UR/0273/65/000/008/0027/0027

21
20
B

AUTHOR: Sakharov, A. G.

TITLE: Investigation of the SMD-14 diesel for diesel and gasoline-diesel processes and turbosupercharge

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya, Abs. 8.39.215

REF SOURCE: Dokl. Mosk. in-ta inzh. s.-kh. proiz-va, v. 1, no. 2, 1964, 21-28

TOPIC TAGS: diesel engine, supercharged engine, gasoline engine / SMD-14 diesel engine

ABSTRACT: Studies of the SMD-14 diesel for diesel and gasoline-diesel processes and supercharge carried out at MIISP are described. Both methods of diesel forcing (gasoline-diesel process and supercharge) have their own characteristics. The gasoline-diesel process permits improvement of the quality of the air to be used in the engine cylinders, whereas the quantity of air in the cylinders is increased with supercharge. In the limits of possible power increase because of the qualitatively better utilization of air, the use of supercharge is not efficient because it requires more expensive equipment than the gasoline-diesel processes and is less economical. However, when the possibility of a more complete utilization of the air charge in the cylinder is exhausted, it is efficient to use supercharge for increasing this charge. The use of supercharge does not eliminate the gasoline-diesel process,

UDC: 621.436.001.5

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L 36298-66

ACC NR: AR5025469

because it contributes equally to the more complete utilization of air in the cylinders. It also decreases the temperature of the working gases and engine parts, the fuel burn-down in the expansion process, and the operation stiffness. 4 figures, 3 tables. [Translation of abstract]

SUB CODE: 21

Card 2/2

L 36299-66 EWT(m)/T WE

ACC NR: AR5025471 SOURCE CODE: UR/0273/65/000/008/0027/0027

AUTHOR: Sakharov, A. G.

42
B

TITLE: Period of self-ignition delay in diesel and gasoline-diesel processes

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya, Abs. 8.39.217

REF SOURCE: Dokl. Mosk. in-ta inzh. s.-kh, proiz-va, v. 1, no. 2, 1964, 5-20

TOPIC TAGS: diesel engine, gasoline engine, ignition lag

ABSTRACT: A description of studies on the period of self-ignition delay in diesel and gasoline-diesel processes is presented. The studies were carried out at MIISP. The results of the studies and analysis of the indicator diagrams show that gasoline input at the diesel intake improves the course of low-temperature multistage fuel// self-ignition processes. Because of this, better engine operation is facilitated (e.g., decrease of stiffness, decrease of self-ignition delay, increase of effective power, increase of controllability criteria, etc). 5 figures, 2 tables, bibliography of 12 citations. [Translation of abstract]

SUB CODE: 21

Card 1/1 UDC: 621.436.019.4.001.5

L 02214-67 EWT(m)/T WE

ACC NR: AR6023335 SOURCE CODE: UR/0273/66/000/003/0033/0033

AUTHOR: Sakharov, A. G.

57
B

TITLE: The initial phase in the oxidation of hydrocarbons in diesel and benzodiesel processes

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya, Abs. 3. 39. 219

REF SOURCE: Dokl. Mosk. in-ta inzh. s.-kh. proiz-va, v. 2, no. 2, 1965, 5-28

TOPIC TAGS: hydrocarbon, hydrocarbon oxidation, diesel process, benzodiesel process, diesel engine, combustion, internal combustion engine

ABSTRACT: A study was made of the oxidation reaction kinetics of hydrocarbons in fuel combustion in a diesel engine. Analysis of studies and indicator diagrams showed that prior to the injection of diesel fuel, hydrocarbons fed at the intake undergo an incomplete oxidation reaction in the cylinder, similar to a cool flame reaction. This reaction yields formaldehyde and carbonyl compounds (aldehydes and ketons); these reactions are based on different mechanisms, depending on the hydrocarbon properties. In a benzodiesel process, fuel fed at the intake enters

Card 1/2 UDC: 621.436.019.4

USSR/ Chemistry

Card 1/2 Pub. 40 - 2/25

Authors : Sakharov, A. I.

Title : Investigation of vapor adsorption on quartz. Part 1. Method of studying adsorption isotherms

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 5-11, Jan 1956

Abstract : The construction of a precision adsorption installation for the study of vapor adsorption on non-porous solid adsorbents is described. The installation consists of special scales (balances) with a sensitivity of $5.7 \cdot 10^{-8}$ g with a load of 1 g and a cryostat for temperatures ranging from minus 150 to plus 50° with a temperature retention accuracy of ± 0.005°. The actions of mercury vapors and vacuum oils on the adsorbent was eliminated from this

Institution : Acad. of Sc., USSR, Inst. of Phys. Chem.

Submitted : June 3, 1955

Card 2/2 Pub. 40 - 2/25

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 5-11, Jan 1956

Abstract : arrangement which increased the reliability of the investigation and simultaneously increased the vapor selection for the investigation. The method employed was found to be suitable for precision adsorption measurements on model adsorbents with a specific surface of 1 m^2/g. Ten references: 4 USSR, 2 Germ. and 4 USA (1921-1951). Drawings; graphs.

SAKHAROV, A.I.

137-58-2-2792

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 84 (USSR)

AUTHOR: Sakharov, A. I.

TITLE: Metal Production Planning for Blooming Mills (Raskroy[fabrikatsiya]metalla na blyumingakh)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii. Ukr. resp. pravl., 1956, Nr 1, pp 141-150

ABSTRACT: In a study of metal production at a blooming mill at the Makeyevka plant attention was given to ingot weight, cost factors, and to the production process itself. It was found that the weight of the ingots could be determined a good deal more accurately by computing it from the dimensions of the molds. As an example, a method is cited of computing ingot weight from the specific gravity of the steel at different temperatures and from the size of the shrinkage cavity. The causes and limits of ingot weight fluctuation were determined. To improve the accuracy of production figures, production indices were introduced whereby only the waste and the cuttings were taken into account, not the rejects. In place of the former production tables, which did not allow for size differences, new tables

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137-58-2-2792

Metal Production Planning for Blooming Mills

covering the basic grades of bloom and slab and ingot types were drawn up, and a nomogram was worked out. An example is given of production under this system. To increase the accuracy of production calculations, a slide rule was designed.

P.G.

1. Rolling mills--Production

Card 2/2

SAKHAROV, A. I., Docent; MEYEROVICH, I. M., ROKOTYAN, Ye. S., Candidates of Tech. Sci.;
ALKESANDROV, A. A., Prof.; STUKALOV, M. I. Engr.; YASHCHENKO, V. A., Engr.;
DOLMATOV, F. M., Engr.;

"Investigation of Power and Strength Characteristics of Blooming Mills to Obtain Maximum Output Capacity," Rolling Mills; Studies, Calculation, Design and Operation, No. 8, Moscow, Mashgiz, 1956. 258 p.

Articles by Rokotyan, Ye. S., Meyerovich, I. M., and others describe results of experiments conducted on blooming, cold-rolling, duralumin-dressing, and car wheel rolling mills.

SAKHAROV, A.I.,

ROKOTYAN, Ye.S., kandidat tekhnicheskikh nauk; MEYEROVICH, I.M., kandidat tekhnicheskikh nauk; ALEKSANDROV, A.A., professor; SAKHAROV, A.I., dotsent; STUKALOV, M.I., inzhener; YASHCHENKO, V.A., inzhener; DOLMATOV, F.M., inzhener.

Improving the performance of blooming mills by determining potentialities in factors of strength and power of the equipment. (MLRA 10:9)
[Trudy] TSNIITMASH no.33:134-147 '56.
(Rolling mills) (Mechanics)

SAKHAROV, A.I.

USSR/Physical Chemistry - Surface Phenomena, Adsorption, Chromatography, Ion Interchange. B-13.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 4014.

Author : B.P. Bering, M.M. Dubinin, Ye. G. Zhukovskaya, A.I. Sakharov, V.V. Serpinskiy.

Inst :

Title : Study of Porous Structure of Solid Bodies by Sorption Methods. III. Gravimetric Methods of Measuring Sorption and Desorption Isotherms of Nitrogen and Benzene Vapors.

Orig Pub: Zh. fiz. khimii, 1957, 31, No 3, 712-716.

Abstract: With a view to select and substantiate the most rational methods of measuring isotherms of vapor sorption (IS) on solid bodies, an improved vacuum installation was constructed; this installation permits reliably to take down the IS of N_2 at a low temperature and the IS of benzene vapors at the room temperature by the gravimetric method. The IS-s determined with the described

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